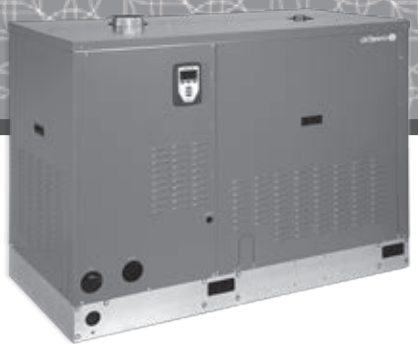
Following installation of this steam-generating humidifier, the installer shall instruct the user in the operation of the steam-generating humidifier and the safety devices. The installer shall give at least this manual and the *GTS Humidifier Installation and Operation Manual* to the user.



GTS®

Gas-to-Steam Humidifier

User Manual

Affix product label here.

driSteem

Only qualified professionals should install, adjust, maintain, or inspect GTS humidifiers.

Note: See the *GTS Humidifier Installation and Operation Manual* (shipped with the humidifier) for installation and start-up instructions.

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The *Vapor-logic5 Installation and Operation Manual* is a comprehensive manual. Refer to it for:

- Setup and menu information
- Input signals and functions
- Alarms and messages
- Firmware updates
- Troubleshooting
- Safety features
- Options

The manual was shipped with your humidifier. It is also available on our website: www.dristeem.com

Keep enclosure and louvres clean

DriSteem recommends cleaning the enclosure as needed to keep dust from collecting on the enclosure and in the enclosure louvers. Refer to the *GTS Humidifier Installation and Operation Manual* for detailed maintenance and inspection schedules. All maintenance should be performed by a qualified professional.

Avoid freezing temperatures

A GTS humidifier mounted in a DriSteem Outdoor Enclosure is designed to operate in freezing temperatures. Take precautions to avoid subjecting an indoor GTS humidifier to freezing temperatures.

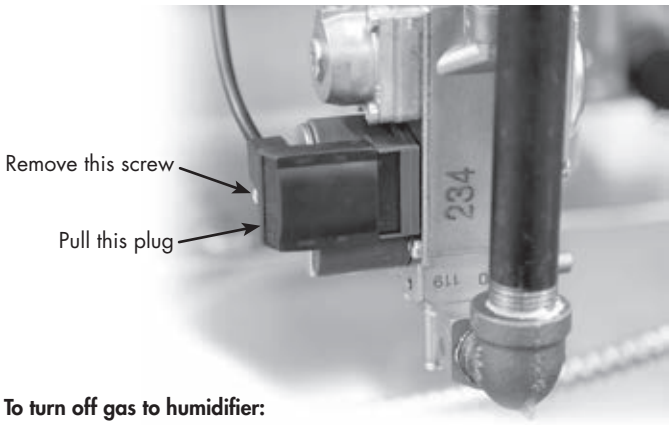
Warnings and cautions

SAFE OPERATING INSTRUCTIONS

1. Read "Fire and explosion hazard" at right.
2. Set the humidistat or the keypad/display desired RH to the lowest setting.
3. Turn off all electric power to the humidifier.

   Note: This humidifier is equipped with an ignition device that automatically lights burner. **Do not try to light the burner by hand.**
4. Remove the humidifier front door.
5. On each burner: Remove the screw, and pull the black power plug off of the gas valve (see detail of gas valve below).
6. Wait five minutes to clear out any gas.
   If you still smell gas, STOP! Follow "B" in the warning at right. If you do not smell gas, go to the next step.
7. Plug the black power plugs back into all gas valves, and tighten the screws.
8. Replace the humidifier front door.
9. Turn on electric power to the humidifier.
10. Set the humidistat or keypad/display to the desired setting.
11. If the humidifier does not operate, follow the instructions below under, "To turn off gas to humidifier," and call a service technician or your gas supplier.

DETAIL OF GAS VALVE



To turn off gas to humidifier:

1. Set the humidistat or the keypad/display desired RH% to the lowest setting.
2. Turn off all electric power to humidifier.
3. Remove front door of humidifier.
4. On each burner: Remove screw, and pull black power plug off of gas valve.
5. Replace front door of humidifier.

To prevent death, injury, or property damage, it is necessary to abide by all warnings and cautions in this manual.

⚠ WARNING

Indicates a hazardous situation that could result in death or serious injury if instructions are not followed.

CAUTION

Indicates a hazardous situation that could result in damage to or destruction of property if instructions are not followed.

⚠ WARNING

Fire or explosion hazard

A. This humidifier does not have a pilot. It is equipped with an ignition device that automatically lights the burner. Do NOT try to light the burner by hand.

B. Before operating, smell all around the humidifier for gas. Be sure to smell next to the floor because gas can be heavier than air and settle on the floor.

If you smell gas:

- Do not try to light any appliances.
- Do not touch any electrical switch; do not use any phone in your building.
- Immediately call your gas supplier from an off-site phone. Follow the gas supplier's instructions.
- If you cannot reach your gas supplier, call the fire department.

C. Do not use this humidifier if any part has been under water. Immediately call a qualified gas appliance service technician to inspect the humidifier and to replace any part of the control system and any gas control that has been under water.

Attention installer

Read this manual before installing, and leave this manual with the product owner. This product must be installed by a qualified HVAC and electrical contractor. Installation must be code approved. Improper installation can cause property damage, severe personal injury, or death as a result of electric shock, burns, or fire.

Read all warnings and instructions

Read this manual before performing service or maintenance procedures on any part of the system. Failure to follow all warnings and instructions could produce the hazardous situations described, resulting in property damage, personal injury, or death.

Continued

WARNING

Carbon monoxide, fire, explosion, and electrical shock hazards
Improper installation, adjustment, alteration, service, maintenance, or use can cause carbon monoxide poisoning, fire, explosion, electrical shock, and other hazardous conditions. These hazardous conditions could cause personal injury, property damage, or death. To prevent hazardous conditions, read all warnings; lock all power disconnect switches in the OFF position before removing any access panels; and consult a qualified installer, service agency, local gas supplier, or your distributor or branch for information or assistance. The qualified installer or agency must use only factory authorized and listed kits or accessories when modifying this product.

- Inspect the humidifier and accessories for damaged, missing, or improper parts. If there is a problem, call your DriSteem distributor.
- Application of this humidifier should have special attention given to vent sizing and material, gas input rate, and humidifier sizing. Improper installation or misapplication of the humidifier could require excessive service or cause permanent component failure.
- When working on the humidifier, observe precautions in the literature and on tags and labels shipped with or attached to the humidifier. Wear safety glasses and work gloves. Have a fire extinguisher available during start-up, adjustment procedures, and service calls.
- Do not lift the humidifier by gas controls, gas manifold, fire box, or shroud.
- Should overheating occur or gas supply fail to shut off, shut off the manual gas valve to the humidifier before shutting off the electrical supply.
- The evaporating chamber is designed as a nonpressurized vessel. **DO NOT restrict piping where steam exits the humidifier**. [deletion] DO NOT install a shut-off valve on piping connecting the evaporating chamber to the steam outlet.
- Check the humidifier name plate for the gas type indicated (natural gas or propane gas). Supply the humidifier only with the indicated gas type, or burner failure will result. To convert the humidifier to a different gas type, contact DriSteem Technical Support or your DriSteem distributor.
- Installation must conform to the requirements of the authority having jurisdiction, or, in the absence of such requirements, must conform to the requirements of local and national directives and regulations for installation of gas-fired equipment.
- Do not install the humidifier in potentially explosive or flammable atmospheres laden with grain dust, sawdust, or similar airborne materials.
- Installation of the humidifier in high-humidity or saltwater atmospheres causes accelerated corrosion, reducing the normal life-span of the humidifier.
- To prevent premature heat exchanger failure, do not install the humidifier where chlorinated, halogenated, or acid vapors are present.
- Install the humidifier in an area clear of combustible materials, gasoline, and other flammable vapors and liquids.

Continued

WARNING

Carbon monoxide, fire, explosion, and electrical shock hazards (continued)

- With the exception of sealed-combustion units, do not install GTS humidifiers in tightly sealed rooms or small compartments without provision for adequate combustion air and venting. Room air combustion must be supplied through a minimum of two permanent openings in the wall, with at least one near the bottom.
- Remove all shipping brackets and materials before operating the humidifier.
- Do not install the humidifier in a negative-pressure space. Combustion products could be drawn in from the venting.
- Humidifier flue gases must be vented to the outside atmosphere.
- The power supply disconnect switch must be in the Off position when making wiring connections to prevent electrical shock and equipment damage. The humidifier must be wired in strict accordance with the wiring diagrams furnished with this unit.
- Turn off all gas while installing the gas piping and manual shutoff valve for the humidifier.
- The humidifier and its individual shut-off valve must be disconnected from the gas supply piping system during any pressure testing of that system at test pressures exceeding 3.5 kPa.

Hot surfaces and hot water

This steam humidification system has extremely hot surfaces.

The burner viewing window and surfaces in the surrounding area are extremely hot — at combustion temperatures. Contact with these surfaces will cause severe burns. To avoid burns, do not touch any surfaces near the burners or viewing window when the humidifier is running.

Dispersion assemblies, steam tubing, and tank water can be as hot as 100 °C. Discharged steam is not visible. Contact with hot surfaces, discharged hot water, or air into which steam has been discharged can cause severe personal injury. To avoid severe burns, follow the cool-down procedure in the *GTS Humidifier Installation and Operation Manual* (shipped with the humidifier) before performing service or maintenance procedures on any part of the system.

Disconnect electrical power

Disconnect electrical power before installing supply wiring or performing service or maintenance procedures on any part of the humidification system. Failure to disconnect electrical power could result in fire, electrical shock, and other hazardous conditions. These hazardous conditions could cause property damage, personal injury, or death.

Follow the shutdown procedure in the *GTS Humidifier Installation and Operation Manual* before performing service or maintenance procedures on any part of the system.

CAUTION

Hot discharge water

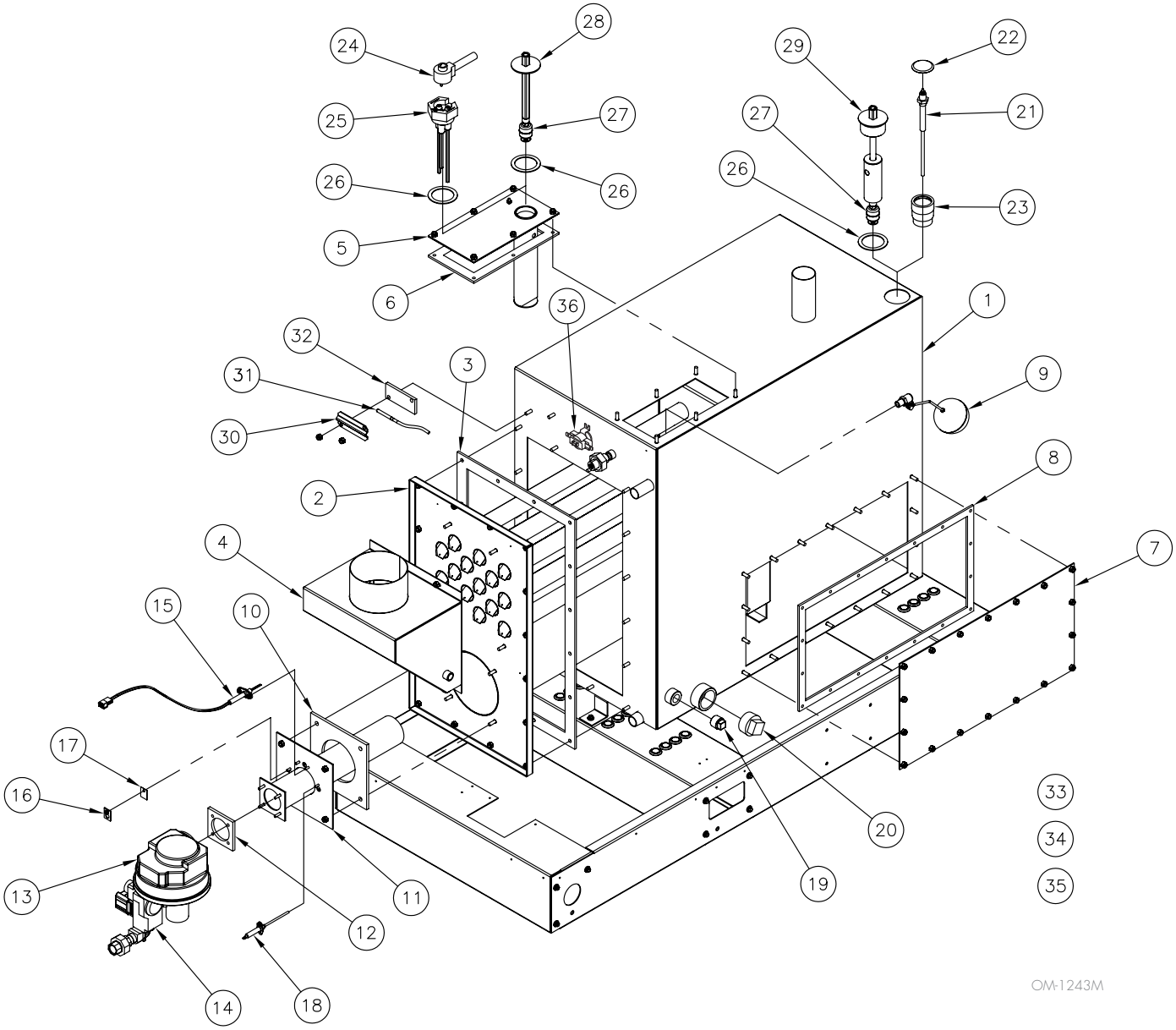
Discharge water can be as hot as 100 °C and can damage some drain plumbing.
The DriSteem Drane-kooler™ water tempering device needs fresh make-up water in order to function properly. Make sure the water supply to the Drane-kooler remains open during draining.

Excessive supply water pressure

Supply water pressure greater than 550 kPa can cause the humidifier to overflow.

Replacement parts

FIGURE 4-1: GTS HUMIDIFIER REPLACEMENT PARTS



Replacement parts

Table 5-1:
GTS humidifier replacement parts

No.	Description	Part No.	No.	Description	Part No.
1	Tank	Contact DriSteem	19	Plug, 3/4"	250192-075
2	Heat exchanger	Contact DriSteem	20	Plug, 1½"	250681-002
3	Heat exchanger gasket	Contact DriSteem	21	Redundant probe *	405726-001
4	Flue box	Contact DriSteem	22	Bushing	405805-004
5	Probe plate	183502-028	23	Adapter weld *	168010-005
6	Probe plate gasket	308235-006	24	Probe plug *	406050-100
7	Cleanout plate	183502-027	25	Probe assembly *	183501-701
8	Cleanout plate gasket	308235-005	26	Probe gasket	309750-004
9	DI float valve assembly **	Contact DriSteem	27	DI float switch **	408420-002
10	Burner gasket	308230-006	28	DI float weld **	167789
11	Burner assembly	183501-302	29	Redundant DI float weld **	167789-002
12	Blower gasket	308230-007	30	Temperature sensor bracket	128666-001
13	Blower assembly	183501-402	31	Temperature sensor	405760
	Blower only	405800-004	32	Temperature sensor gasket	308230-011
14	Gas valve	405800-007	33	Gas manifold weld ***	Contact DriSteem
15	Ignitor	405718-001	34	Sealed combustion assembly ***	Contact DriSteem
16	Sight glass bracket	128661	35	Pallet/shroud components ***	Contact DriSteem
17	Sight glass	405720	36	Thermal trip	409560-001
18	Flame sensor	405725			

* Tap/softened water GTS humidifier only
** GTS humidifier with RO/DI water option only
*** Not shown

FIGURE 6-1: GTS HUMIDIFIER FILL, DRAIN, AND BLOCKED FLUE SENSOR REPLACEMENT PARTS

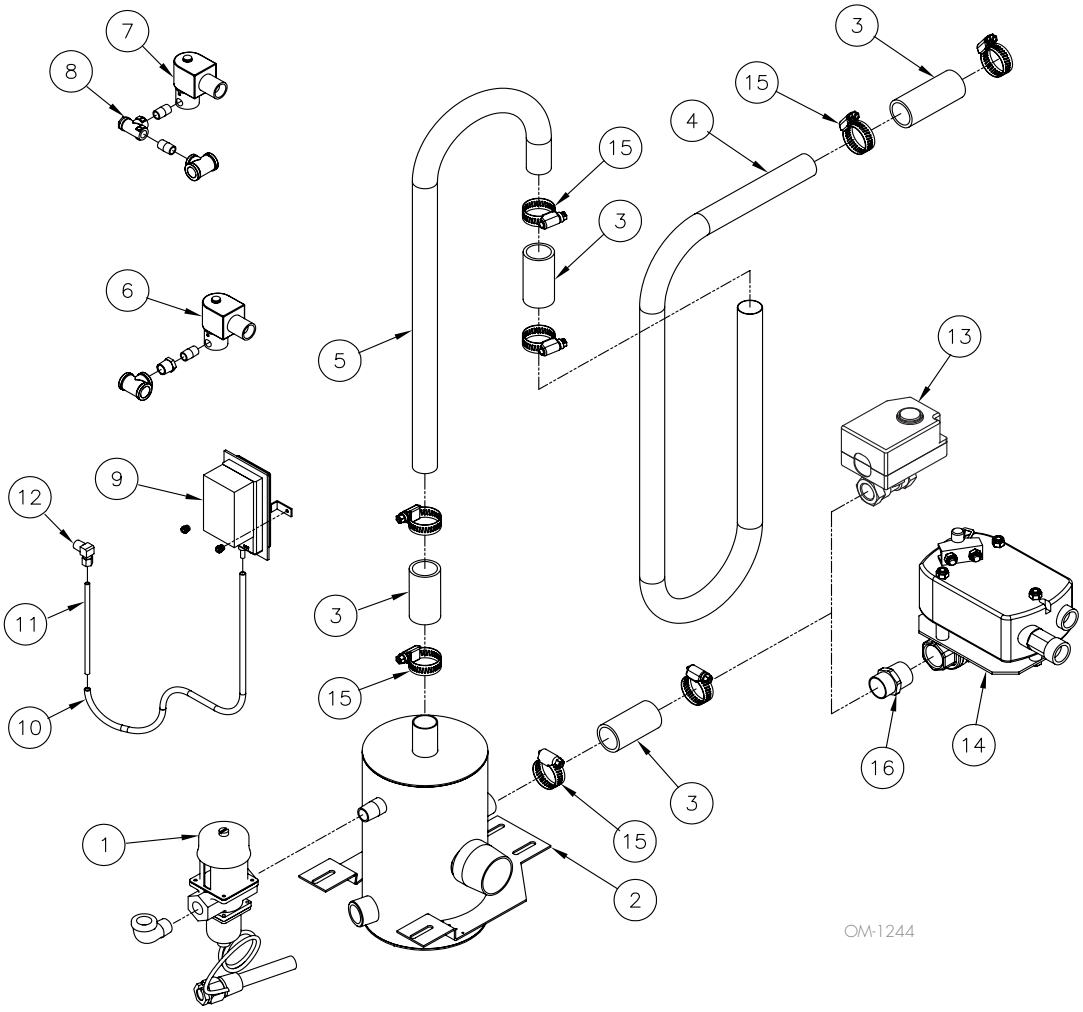


Table 6-1:
GTS humidifier fill, drain, and blocked flue sensor replacement parts

No.	Description	Part No.	No.	Description	Part No.
1	Water tempering valve	505090	10	Flexible tubing	405722
2	Water tempering tank	Contact DriSteem	11	Copper tubing	100038-025
3	Drain hose cuff	305389-003	12	Compression elbow	405723
4	Top water seal tube	204812-201	13	Drain valve, tap/softened water models *	505401-001
5	Bottom water seal tube	204812-202	14	Drain valve, DI-EOS models **	193768-001
6	Fill valve, DI EOS models **	505086	15	Hose clamp	700560-100
7	Fill valve, tap/softened water models *	505095	16	Adapter, NPT x C	204700
8	Strainer *	300050	17	Fill hose ***	Contact DriSteem
9	Blocked flue sensor	406190	18	Water tempering hose ***	Contact DriSteem

* Tap/softened water GTS humidifier only
** GTS humidifier with RO/DI water option only
*** Not shown

FIGURE 7-1: GTS HUMIDIFIER ELECTRICAL REPLACEMENT PARTS

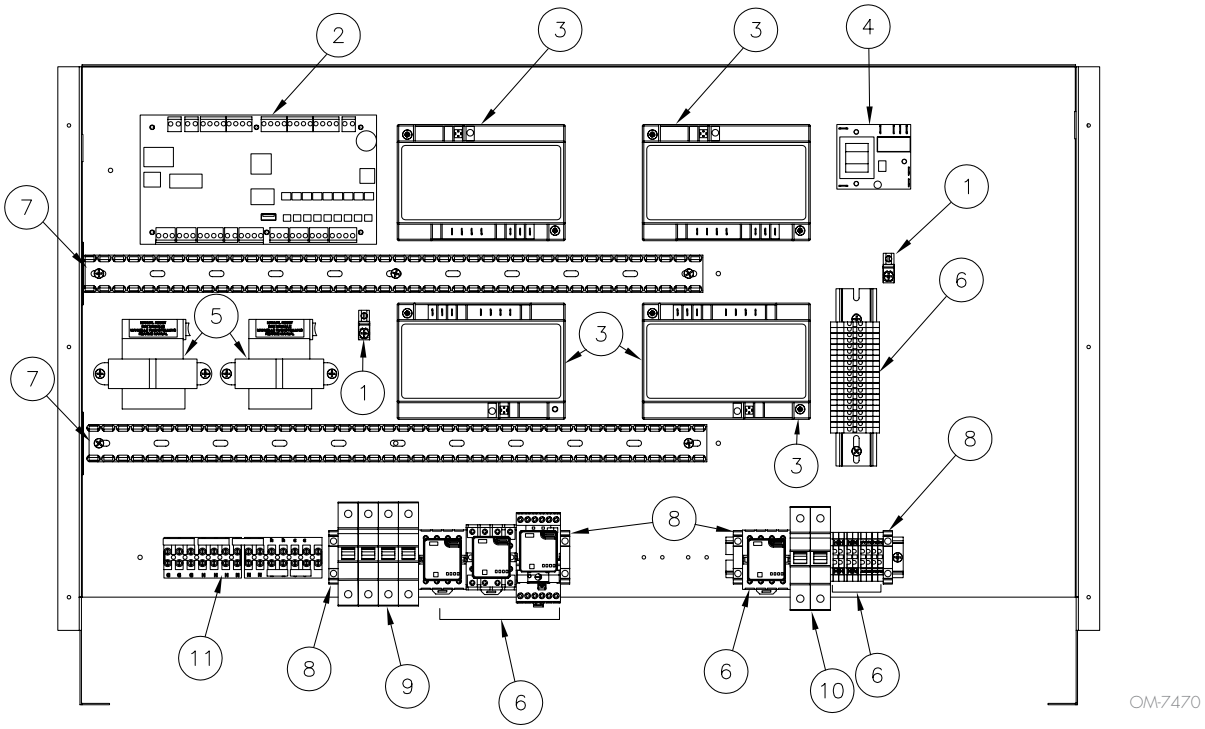


Table 7-1:
GTS humidifier electrical replacement parts

No.	Description	Part No.
1	Ground wire lug	409250-003
2	Vapor-logic main board	408496-002
3	Ignition module	405800-005
4	Low water board *	405726 *
5	Transformer	408985
6	Relays, Sockets, time delay	Contact DriSteem
7	Wire channel	408999-001
8	DIN-rail end bracket	408252-006
9	Circuit breaker, 2-pole	406775-004
10	Circuit breaker, single-pole (for SDU option only)	406775-009
11	Terminal strip	Contact DriSteem
* Tap/softened water GTS humidifier only		

Expect quality from the industry leader

Since 1965, DriSteem has led the industry with innovative methods for humidifying and cooling air with precise control. Our focus on ease of ownership is evident in the design of the GTS humidifier, which features cleanable, stainless steel construction. DriSteem also leads the industry with a Two-year Limited Warranty and optional extended warranty.

For more information
www.dristeem.com
sales@dristeem.com

For the most recent product information visit our website: www.dristeem.com

DRI-STEEM Corporation
a subsidiary of Research Products Corporation
DriSteem is an ISO 9001:2000 certified company

U.S. Headquarters:
14949 Technology Drive
Eden Prairie, MN 55344
800-328-4447 or 952-949-2415
952-229-3200 (fax)

European office:
Grote Hellekensstraat 54 b
B-3520 Zonhoven
Belgium
+3211823595
E-mail: dristeem-europe@dristeem.com

Continuous product improvement is a policy of DriSteem; therefore, product features and specifications are subject to change without notice.

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Form No. GTS-UM-0714
Part No. 890000-107 Rev A

Two-year Limited Warranty

DRI-STEEM Corporation ("DriSteem") warrants to the original user that its products will be free from defects in materials and workmanship for a period of two (2) years after installation or twenty-seven (27) months from the date DriSteem ships such product, whichever date is the earlier.

If any DriSteem product is found to be defective in material or workmanship during the applicable warranty period, DriSteem's entire liability, and the purchaser's sole and exclusive remedy, shall be the repair or replacement of the defective product, or the refund of the purchase price, at DriSteem's election. DriSteem shall not be liable for any costs or expenses, whether direct or indirect, associated with the installation, removal or reinstallation of any defective product. The Limited Warranty does not include cylinder replacement for electrode steam humidifiers.

DriSteem's Limited Warranty shall not be effective or actionable unless there is compliance with all installation and operating instructions furnished by DriSteem, or if the products have been modified or altered without the written consent of DriSteem, or if such products have been subject to accident, misuse, mishandling, tampering, negligence or improper maintenance. Any warranty claim must be submitted to DriSteem in writing within the stated warranty period. Defective parts may be required to be returned to DriSteem.

DriSteem's Limited Warranty is made in lieu of, and DriSteem disclaims all other warranties, whether express or implied, including but not limited to any IMPLIED WARRANTY OF MERCHANTABILITY, ANY IMPLIED WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, any implied warranty arising out of a course of dealing or of performance, custom or usage of trade.

DriSteem SHALL NOT, UNDER ANY CIRCUMSTANCES BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, LOSS OF PROFITS, REVENUE OR BUSINESS) OR DAMAGE OR INJURY TO PERSONS OR PROPERTY IN ANY WAY RELATED TO THE MANUFACTURE OR THE USE OF ITS PRODUCTS. The exclusion applies regardless of whether such damages are sought based on breach of warranty, breach of contract, negligence, strict liability in tort, or any other legal theory, even if DriSteem has notice of the possibility of such damages.

By purchasing DriSteem's products, the purchaser agrees to the terms and conditions of this Limited Warranty.

Extended Warranty

The original user may extend the term of the DriSteem Limited Warranty for a limited number of months past the initial applicable warranty period and term provided in the first paragraph of this Limited Warranty. All the terms and conditions of the Limited Warranty during the initial applicable warranty period and term shall apply during any extended term. An extended warranty term of an additional twelve (12) months or twenty four (24) months of coverage may be purchased. The extended warranty term may be purchased until eighteen (18) months after the product is shipped, after which time no extended warranties are available.

Any extension of the Limited Warranty under this program must be in writing, signed by DriSteem, and paid for in full by the purchaser.

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